

# COMPANIES' FINANCIAL ATTRIBUTES AND ENVIRONMENTAL ACCOUNTING PRACTICES OF THE OIL AND GAS INDUSTRY IN NIGERIA

BY  
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## **Abstract**

*This study is an empirical investigation of the environmental accounting practices of the oil and gas industry in Nigeria and the influence of companies' financial attributes (profitability, leverage, liquidity and value added by the Firm) on environmental accounting disclosure practices (EADP). Ex-post facto research design was adopted in the study. An environmental disclosure index in line with Global Reporting Initiative, GRI (2006/2008) was developed and environmental data from the annual reports of the ten oil and gas companies listed on the Nigerian Stock Exchange, over a seven-year period, 2009 – 2015 were captured using content analysis. The data obtained was analysed using descriptive and inferential statistics. The study reveals that on an average, the sampled companies' environmental accounting disclosure practices level is 13%. Findings reveal that the sampled oil and gas companies were disclosing very inadequate and non-financial environmental information in their annual reports. Also, profitability (ROA) has significant negative influence on environmental accounting disclosure practices; liquidity (CR) has insignificant influence on EADP while leverage and the value added by the Firm have significant positive influence on EADP. There is need to improve EADP by oil and gas companies in Nigeria while government should give tax incentives to companies that comply so as to improve the environmental performance of firms and the nation's sustainable development.*

**Keywords:** *Environmental Accounting Practices, Environmental Accounting Disclosure Practices (EADP), Profitability, Leverage, Liquidity, Value Added by Firm, Annual Report & Accounts.*

## **1. Introduction**

The negative impacts on the natural environment due to various economic activities are becoming an increasing concern among stakeholders and the public at large. Recently, there have been a hue and cry all over the world about climate change, as this has been highly inimical to our existence; oceans levels keep rising, global warming keeps threatening, natural resources serving as natural processor being cut down, companies deplete resources and negatively impact the environment, yet nothing to protect our future generations (Berdugo & Mefor, 2012).

In Nigeria, to be precise, one of the reasons for agitations in the Niger Delta Region is the environmental degradation and neglect on the part of the oil and gas companies operating in the region. The agitators keep changing names from militants to avengers to oil and gas pipes vandals, all agitating not only for being marginalised and neglected, but their environment highly degraded and polluted without adequate compensations and proper accountability for the resources consumed.

According to UNEP (2011) on Environmental Assessment of Ogoniland, two-thirds of the contaminated land sites close to oil and gas companies' facilities which were assessed in details exceeded the environmental reports set out in their annual reports. Most businesses have generally ignored environmental impacts but the use and misuse of natural resources all lead to environmental costs generated by the businesses. Makori and Jagongo (2013) stated that corporate firms will lose faith of their stakeholders in future due to environmental accounting practices not included in their main stream reporting. Oladipupo, Mathias and Mohammed (2013) and Umoren, Udo and George (2015) opined that users of accounting information need data that would allow them to assess an entity's responsiveness to environmental, social, governance and financial issues. Companies are expected to operate in a manner

that is socially and ethically responsible with minimum negative impacts on the environment for sustainable growth.

Although, there is no standard on environmental accounting practices and disclosures under International Financial Reporting Standards (IFRS), but IFRS recommended that if environmental matters fall within scope of specific accounting principles, they must be dealt with under the relevant standard; (IAS 1, Revised - “Presentation of Financial Statements” requires disclosure of material facts for a proper understanding of financial statements; IAS 37 – requires provisions for environmental damages to be made in financial reports; IFRS 6 – requires identification & disclosures from exploration for and evaluation of mineral resources). Spence (2007), Makori and Jagongo (2013) and Dibia and Onwuchekwa (2015) observed that, the voluntary stance of environmental reporting has often been used as a cliché for companies to under-report their impacts on the environment, which accounts for the negligence by several corporate entities with regards negative externalities.

From the studies in Australia (Eltaib, 2012), India (Malik and Mittal, 2015) and Kenya (Tanui, Chumba and Bitange (2015), it has been showed that the level of oil and gas industry environmental accounting disclosure practices were significant in benchmarking of national standards on sustainability reporting and that environmental disclosure is a key step in practicing environmental accounting. Accounting profession globally recognized the importance of financials and the significance of environmental costs and benefits. As such companies attributes otherwise known as key financial performance indices of any industry (such as the profitability, leverage, liquidity and value added by the firm) are always being argued for in motivating the reporting entities to disclose their environmental accounting practices. Abdullah and Ismail (2008), Darus, Yusof and Janggu (2016) and Nor, *et al.* (2016) argued that, the level of disclosure of environmental accounting practices is influence by companies’ financial attributes such as profitability, leverage, liquidity and value added by the Firm, whereas Kokubu and Nashioka (2001), Nugroho and Arjowo (2014) and Umoren, *et al.* (2015) opined that financial attributes of a company do not significantly influence the disclosure of environmental accounting practices.

Thus, from all indications, it seems that none has clarified the actual factor the influence of specific companies’ attributes on environmental accounting disclosure practices in the oil and gas industry in Nigeria. Against this background, it becomes necessary to:

- i. examine the level of environmental accounting disclosure practices of the listed oil and gas companies in Nigeria.
- ii. evaluate the companies’ attributes (profitability, leverage, liquidity and value added by the firm) influencing environmental accounting disclosure practices of the listed oil and gas companies in Nigeria.

To achieve the objectives of this study, these Research Questions were raised:

- i. What are the environmental accounting disclosure practices of the listed oil and gas companies in Nigeria?
- ii. How do the companies’ attributes significantly influence the environmental accounting disclosure practices of the listed oil and gas companies in Nigeria?

### **Hypotheses of the Study**

The Null hypothesis ( $H_0$ ) was formulated to guide the study: **H<sub>0</sub>:** Companies financial attributes (Profitability, Leverage, Liquidity and Value added by the firm) do not significantly influence environmental accounting disclosure practices of the oil and gas industry in Nigeria.

### **2. Review of Related Literature**

This section is the review of relevant literature and will be discussed in four perspectives namely; conceptual review, theoretical review and empirical review.

**Environmental Accounting** is an all-inclusive field of accounting that provides for both internal and external use, generating environmental information to help make management decisions on pricing, controlling overhead and capital budgeting, and external use, disclosing environmental information of interest to the public and to the financial community (Dorweiler & Yakhou, 2004).

**Environmental Accounting Disclosure Practice (EADP)** is a framework for organizations to identify and account for past, present and future environmental costs to support managerial decision-making, control and for public disclosure. The practices are:

(A). Environmental financial accounting: It is the provision of accounting information both financial and non-financial and application areas of environmental-related costs, earnings and saving to external users. It is a reporting practice that ensures that all relevant costs are considered – monetary environmental issues bothering global warming contribution, energy requirement, wastes assets, liabilities, equity, income and expense, etc; for all users. It otherwise called monetary environmental accounting;

(B). Environmental pollution cost and management accounting is to probe whether the companies' invested into environmental pollution cost and management and whether this has been carried out; (C). Environmental energy reporting otherwise called physical environmental accounting - is to probe whether management account-for environmental quality management through the development of environmental management systems for environmental energy savings; and

(D). Environmental accounting audit is an independent assessment of the companies in respect of environmental performance (Global Reporting Initiative, 2006/2008).

### **Theoretical Review**

**Legitimacy Theory.** According to Lindblom (1994), legitimacy is a condition or status which exists when an entity's value system is congruent with the value system of the larger social system of which the entity is a part. Legitimacy theory argued that organizations seek to ensure that they operate within the bounds and norms of society. It is the most widely discussed theory in explaining corporate social and environmental disclosure practices (Oba & Fodio, 2012) and environmental disclosure in corporate annual report is a tool for maintaining legitimacy (Deegan, 2002). Legitimacy theory explained how environmental disclosures can be used to narrow the gap between company actions and social expectations.

**Stakeholder Theory.** It states that disclosure of environmental information by organization is as a result of the pressure from stakeholders. That an organization will respond to the concerns and expectations of powerful stakeholders, and some of the responses will be in the form of strategic disclosures. Stakeholders' theory provides rich insights into the factors that motivate managerial behaviours in relation to the social and environmental disclosure practices of organizations. Organisations are thus responsible to these stakeholders and rely upon their continued approval to maintain a successful operating environment (Roberts, 1992). Stakeholder theory concentrates upon defining factors influencing the continued existence of corporations. Stakeholder theory postulates a positive relationship between financial performance and the level of environmental disclosure.

**Institutional Theory.** According to institutional theory, organizational behaviour is conditioned by the expectations stemming from the institutional environment. Institutional theory is concerned with examining and explaining how institutionalized norms and pressures affect social changes among organizations. This theory is slowly but steadily emerging as a useful theoretical framework in relation to the environmental implications of an organization's operations and behaviours. The institutional framework emphasized the importance of regulatory, normative, and cognitive factors that affect firms' decisions to adopt a specific organization practice. This theory has been the most regulatory pillar on environment management practices. Institutional theory explores different means/mechanism through

which information about legitimate and socially accepted organisational behaviour can be transmitted and such behaviour institutionalised in organisations (Qian, Burritt & Monroe, 2011).

## **Empirical Review**

### **Companies' Attributes Influence on Environmental Accounting Disclosure Practices**

Prior studies on companies' attributes (profitability, leverage, liquidity and value added by firm) have revealed that companies' attributes influence environmental accounting disclosure practices.

**Profitability and Environmental Accounting Disclosures Practices:** Gatimbu and Wabwire (2016) investigated the effect of corporate environmental disclosure on financial performance (profitability and leverage) of firms listed at Nairobi Securities Exchange, Kenya. Secondary data from the annual reports and accounts of listed companies at the Nairobi Securities Exchange. Content analysis of sampled listed companies' annual reports was undertaken to examine environmental disclosure practices. Casual research design was employed to determine the cause-effect relationship between corporate environmental Disclosure and profitability and leverage. Target population of the study was 61 listed companies. Purposive sampling was employed in selecting 32 listed companies in Nairobi Securities Exchange. Linear regression model was used to determine the casual relationship between environmental disclosure and financial performance. Leverage have no effect on environmental disclosure. Findings revealed that environmental disclosure with P-value <0.05 has a positive significant effect in the mean financial performance. It was recommended that firms should engage in environmental disclosure because it leads to increased profitability.

Makori and Jagongo (2013) examined environmental accounting and firm profitability, an empirical analysis of selected firms listed in Bombay Stock Exchange, India. The objective of this study is to establish whether there is any significant relationship between environmental accounting and profitability of selected firms listed in India. The data for the study were collected from annual reports and accounts of 14 randomly selected quoted companies in Bombay Stock Exchange in India. The data were analysed using multiple regression models. The key findings of the study shows that there is significant negative relationship between environmental accounting and return on capital employed (ROCE) and earnings per share (EPS) and a significant positive relationship between environmental accounting and net profit margin and dividend per share (DPS). It was concluded that large companies tend to report more environment information in their annual reports than the medium-scale businesses; and the disclosure, tend to be more qualitative than quantitative despite the fact that there is a significant relationship between environmental accounting and firm profitability.

**Leverage and Environmental Accounting Disclosures Practices:** The Alarussi, Hanefah, and Salamat (2016) investigated whether the financial and voluntary environmental disclosures through the internet can be explained by the same determinants as in conventional reporting. Specifically, this paper examines the relationship between the extent of financial and environmental disclosures on the internet and six variables, namely, ethnicity of chief executive officer (CEO), leverage and level of technology, existence of dominant personalities, profitability, and firm size. Six hypotheses were tested using data collected from 2011 – 2013 annual reports and accounts of Malaysian listed companies on the Bursa Malaysia's Main and Second Boards. A regression model is utilized to analyse the results of this paper and this is in tandem with the previous studies. Leverage did not show any significant relationship.

Sulaimana, Abdullahb and Fatimaa (2010) investigated the determinants of environmental reporting quality in Malaysia. Specifically, the relationship between share ownership distribution, profitability, firm size and leverage with the quality of environmental disclosure in annual reports in 2009, two years after Malaysia made corporate social responsibility disclosure mandatory for all listed companies. Three theories; legitimacy, resource based view and information provided the theoretical underpinnings of the study. A content analysis of the annual reports of 164 companies in the environmentally sensitive industries (ESI) was undertaken. The findings revealed a significant positive

association between firm size and leverage with the level/quality of environmental reporting, thus providing the support for legitimacy theory.

**Liquidity and Environmental Accounting Disclosures Practices:** Barako (2007) evaluated the determinants of voluntary disclosures in Kenyan companies' annual reports using companies' specific attributes (size, leverage, type of audit firm, profitability, liquidity and industry type as a control variable). Due to the relatively small number of companies listed on the NSE (54), all companies were considered for inclusion in the survey. This study provided longitudinal examination of voluntary disclosure practices in the annual reports of listed companies in Kenya from 1992 to 2001. Pooled Ordinary Least Square (OLS) with Panel-Corrected pooled Ordinary Least Square (OLS) with Panel-Corrected Standard Errors (PCSEs) was the method of statistical analysis used. Results indicated that, disclosures of all types of information are influenced by corporate characteristics. In particular, the results suggested that size, leverage and liquidity variables were significant for environmental financial disclosures. It was concluded from the findings of the pooled regression analyses that all types of information disclosures are influenced by corporate financial attributes.

Nugroho and Arjowo (2014) investigated the effects of sustainability report disclosure towards financial performance (profitability and liquidity). The samples were taken from the manufacturing companies that revealed Sustainability Report Listed on the Indonesian Stock Exchange (IDX). The statistical method used in this study is the linear regression analysis. The results showed that liquidity (CR) has no significant effect on the Sustainability Report Disclosure but significant to the profitability of the company. It suggested that changes in the Sustainability Report do not significantly affect the changes in liquidity.

**Value Added by Firm and Environmental Accounting Disclosures Practices:** Staden (2000) investigated influence of the value added statement on disclosures worth of listed South African Companies as at 1999 financial year. The descriptive and explanatory survey design was adopted in the study. The findings showed that value added information could indicate decision usefulness with regards to the stakeholder; this was also investigated with reference to the decision usefulness of social disclosures in general, and value added information in particular. The study revealed that value added by firm presents unbiased and verified disclosures that will be useful to all the stakeholders of the company. It was concluded in the study that value added by a firm has implications for other voluntary social and environmental disclosures.

Darus, Yusof and Janggu (2016) investigated environmental protection and value creation. The aim of the study was to examine the environmental disclosure of 200 Shariah Compliant Companies (SHCC) in Malaysia for 2013 and the subsequent effect of value created by firms on disclosure for the organizations. Content analysis approach was used to gather the environmental information disclosed from the annual and sustainability reports of 200 SHCCs for the year 2013. The value creation to the organization was described to be a result of disclosure of environmental information and was measured both in terms of financial and non-financial attributes to form a Value Creation Index. The results of the content analyses of the annual reports revealed that managers from the Plantation industry disclosed more environmental information. The regression analysis revealed a significant relationship between environmental information provided and the subsequent financial value created for the organizations.

### 3. Methodology

Ex-post facto research design was adopted in the study. This research design was deployed as it permitted the examination of independent variables in retrospect for their possible relationship with dependent variables. The population for this study consisted of the ten (10) oil and gas companies listed on the Nigerian Stock Exchange (NSE) as at March 2016. This due to the fact that only ten (10) oil and gas companies are quoted, as such their annual reports are published. Seventy (70) observations (N) were obtained through longitudinal time series. Taro Yamane's sample size statistical formula was used to

determine the sample size of ten companies at error term of 0.05. Purposive sampling technique was used to select the samples/industry based on the fact that they belong to an area of high environmental pollution that more of environmental accounting disclosure practices are expected to be high, likewise the ease with which the data needed, can be collected.

**Table 3.1: The Samples Selected**

S/N	Representation	List of Companies
1	A	Japaul oil & Maritime Service Plc
2	B	Oando Plc
3	C	Beco Petroleum Product Plc
4.	D	Conoil Plc
5	E	Eterna Plc
6.	F	Forte Oil Plc (AP)
7	G	Mobil Oil Nig. Plc
8.	H	Mrs Oil Nig. Plc (Texco Nigeria Ltd)
9	I	Total Nigeria Plc
10.	J	Seplat Petroleum Development Company Plc

**Source: Researcher’s sample selected from NSE (2016)**

Secondary sources of data consisted of the annual reports and accounts of the selected companies were the main sources of data used in this study. Specifically, from directors’ reports, sustainability reports, statement of financial positions, statement of profit or loss and other comprehensive income, notes to the financial statements and NSE compliance reports. Both online published and Uyo Branch of Nigerian Stock Exchange annual reports and accounts of the sampled companies from 2009 – 2015 were the main method of data collection for the study. Data were also obtained from relevant text-books, journals, environmental impact newsletters, bulletins, UNEP Report (2011), GRI guidelines (2006/ 2008) as well as Department of Petroleum Resources (Nigeria).

**Model Specification**

A multiple regression model was fitted to test how dependent variable (EADP) is expanded by independent variables. The functional form as stated thus:

$$Y = \beta_0 - \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \epsilon_{it} \dots \dots \dots \text{eqn. (i)}$$

$$\text{EADP} = f(\text{CA}) \dots \dots \dots \text{eqn. (ii)}$$

Y = EADP = (environmental accounting disclosure practices) as measured by the summation of: environmental financial accounting practice, environmental pollution cost and management accounting practice, environmental energy reporting (physical environmental accounting) practice and environmental accounting audit practice.

CA = Companies Attributes = ROA, LEV, CR, VAD.

The multiple regression equation can be defined as follows:

$$\text{EADP} = \beta_0 - \beta_1 \text{ROA}_{it} + \beta_2 \text{LEV}_{it} + \beta_3 \text{CR}_{it} + \beta_4 \text{VAD}_{it} + \epsilon_{it} \dots \dots \dots \text{eqn. (iii)}$$

Where: i,t = company i in year t (longitudinal time series observations)

$\beta_0$  = Constant term,  $\beta_1, \beta_2, \beta_3, \beta_4$  = estimated coefficients of the independent variables

ROA = Return on Assets ( $X_1$ ), LEV = Leverage ( $X_2$ ), CR = Current Ratio ( $X_3$ )

VAD = Value Added by Firm ( $X_4$ ),  $\epsilon$  = error term

**Table 3.2: Companies’ Financial Attributes Measurement and Explanations**

Variables	Types	Measurement/Definition	Expected Sign	Source
EADP	Dependent	1 = Companies that engaged in full environmental accounting disclosure, 1/2 = partial, 0 = Non-disclosure of environmental accounting in their annual reports.		Annual Report
Profitability, Return on Assets (ROA)	Independent	Profit before interest & tax (PBIT) total assets It is a measure of the overall operational efficiency of the business.	-	Annual Report
Leverage, total debts to total assets ratio (LEV)	Independent	total debts total assets It indicates what percentage of total funds employed is generated from external funds.	+	Annual Report
Liquidity, current ratio (CR)	Independent	current assets current liabilities It measures the ability of a business to meet its short-term liabilities, as and when they fall due.	+	Annual Report
Value Added by the Firm	Independent	Log (total value wealth added/created) It measures the additional wealth/value created by the activities of a firm and its employees, that is, turnover less the cost of bought in goods and services.	+	Annual Report

**Source: Compiled by Researcher (2016)**

Descriptive and inferential statistics were used to analyse the data. In order to determine the level of and what environmental accounting disclosure practices engaged by the listed oil and gas companies in Nigeria, a disclosure index (checklist) of 40 items in line with Global Reporting Initiative (2006) and based on content analysis was developed to capture the environmental accounting issues. Each company was scored “1” for full disclosure, “1/2” for partial disclosure and “0” for non-disclosure under content analysis, which is presently the most widely used technique for analysis of accounts in annual reports (Shil & Iqbal, 2005). The Global Reporting Initiative (GRI) framework sets out the principles and indicators that organizations can use to measure and report their economic, environmental and social performance. Based on this, this study developed an environmental disclosure index with 40 items. It is to be noted that the environmental disclosure scores ( $EDS_{it}$ ) for each company was computed by using the formula:  $EDS_{it} = \sum(d_i \text{ disclosed items}) / \sum_i \sum_i (d_i \text{ all possible cases of disclosure})$ . This is done through content analysis, which is a method of coding the text or the context of a piece of writing into various groups or categories based on selected criteria. Rationale for use of content analysis: It is chosen due to its ability to analyse different types of communication tools including those in written code. Thus, the environmental disclosures index was used in this study as the measurement of dependent variable (environmental accounting disclosure practices) of this study. The environmental disclosures index was computed to determine the level of practices and a multivariate regression analysis tested to determine the companies’ attributes (profitability, liquidity, leverage and value added by the Firm) influence on

environmental accounting disclosure practices. The Statistical Package for Social Science (SPSS) Version 20.0 was used at 5% level of significance.

#### 4. Data Presentation, Analysis and Discussion of Findings

From Table 4.1 (appendix), the descriptive statistics reveals the mean environmental disclosure scores of 13%, standard deviation (6.5%), variance (0.4%), minimum score (4.2%) and maximum score (22.9%). It is found that maximum mean of 4.9% items disclosure practices were under environmental financial accounting, 1.4% for environmental pollution cost and management accounting practice, 2.2% on environmental energy reporting and 4.5% for environmental accounting audit practice. Based on environmental disclosure practices ranking of sample companies, the results reveal the followings: Japaul Oil & Maritime (8.3%), Oando (22.9%), Beco Petroleum Product (16.7%), Conoil (10.4%), Eterna (8.3%), Forte Oil (4.2%), Mobil Oil Nig. (8.3%), Mrs Oil Nig. (8.3%), Total Nig. (4.2%) and Seplat Petroleum Development Company Plc (8.3%). Multiple regression model was fitted to test the hypotheses between environmental accounting disclosure practices (dependent variable) and companies' attributes (independent variables) and the results are presented in Table 4.5 and Table 4.6.

**Table 4.2: Descriptive Statistics for the Variables**

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Variance</b>
ROA	70	-0.878	0.1866	-0.156	0.389	0.151
CR	70	0.662	3.147	1.295	0.650	0.423
LEV	70	0.382	1.105	0.767	0.260	0.068
VAD	70	-1.402	7.256	2.982	3.173	10.070
EADP	70	0.042	0.229	0.130	0.065	0.004

The mean value for environmental accounting disclosure practices (EADP) which is the dependent variable of the study is 0.130. The descriptive statistics also provided for standard deviation value and variance value of EADP. The standard deviation value is stated at 0.065 whereas the variance is at 0.004. The minimum value of EADP shows that the least disclosure practices of the sampled companies is 0.042 values while the highest value is 0.229 as indicated in the environmental disclosure indexes used in the study. The independent variables used in this study are the companies' attributes as measured by ROA, CR, LEV and VAD. The first independent variable used to measure the companies' attributes is ROA, which the mean for the variable is -0.156 whereas the standard deviation of the variable is 0.389 and the variance shows the value of 0.151. The second independent variable used in this study is CR which the mean value is 1.295. The value for standard deviation and variance of this variable is 0.650 and 0.423 respectively. The maximum value of CR is 3.147 and the minimum value is 0.662. Furthermore, the third independent variable used to measure the companies' attributes is LEV which the mean value of this variable is 0.767. This variable also shows that the standard deviation of 0.260 whereas the variance of this variable stated at 0.068. The lowest LEV recorded among the companies used in this study is showed by the minimum value of 0.382 and the highest value among the companies is determined by the maximum value of 1.105. The fourth variable used is VAD as the mean value stated for this variable is 2.982. The standard deviation and variance stated for this variable is 3.173 and 10.070 respectively. The maximum value recorded for this variable is 7.256 whereas the minimum value is stated a negative value of -1.402.



**Table 4.3: Summary Result for Normality Test**

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
ROA	.346	70	.000	.674	70	.000
CR	.238	70	.000	.760	70	.000
LEV	.150	70	.000	.887	70	.000
VAD	.174	70	.000	.878	70	.000
EADP	.227	70	.000	.859	70	.000

To check for the normality of the data to ensure that error terms are normally circulated, Kolmogorov- Smirnov test and Shapiro-Wilk test were used. The result shows p-value of .000 for all the five variables (ROA, CR, LEV, VAD and EADP). Since the p-values are all greater than .05(p<05), this means that ROA, CR, LEV, VAD, EADP are non- normally distributed. Therefore, the Spearman rank correlation was used to establish the correlation among the variables instead of Pearson Product Moment Correlation which is only for normally distributed data set. Result of Spearman correlation is shown on Table 4.4.

**Table 4.4: Correlations of Environmental Accounting Disclosure Practices (EADP) with Companies Attributes (ROA, CR, LEV and VAD)**

		ROA	CR	LEV	VAD	EADP
<b>ROA</b>	Correlation Coefficient	1.00	.434**	.699**	.740**	-.442**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	70	70	70	70	70
<b>CR</b>	Correlation Coefficient	.434**	1.00	.352**	.440**	-.203
	Sig. (2-tailed)	.000		.003	.000	.091
	N	70	70	70	70	70
<b>LEV</b>	Correlation Coefficient	.699**	.352**	1.00	.310**	.260*
	Sig. (2-tailed)	.000	.003		.009	.030
	N	70	70	70	70	70
<b>VAD</b>	Correlation Coefficient	.740**	.440**	.310**	1.00	-.504**
	Sig. (2-tailed)	.000	.000	.009		.000
	N	70	70	70	70	70
<b>EADP</b>	Correlation Coefficient	-.442**	-.203	.260*	-.504**	1.00
	Sig. (2-tailed)	.000	.091	.030	.000	
	N	70	70	70	70	70

*Source: Researcher's computation (2016)*

Correlations test was carryout by using Spearman's Rho as the normality test stated that the data were not normally distributed. It is known that the significant (2-tailed) as p-value. From the Table 4.4, it indicated that there is significant but negative correlation between EADP and ROA as the significant

value is 0.000 and 0.000 respectively at 0.05 which is lower than 0.05 level of significant. The correlation coefficient values are -0.442 and -0.504 which show that the negative relationship with EADP while CR shows that there is no significant correlation with EADP at 0.05 level as the significant value is 0.091 (significant at 0.1 level) with correlation coefficient value of -0.203. LEV another measurement of companies' attributes shows a positive significant correlation with EADP. The significant value for LEV is 0.030 with the correlation coefficient of 0.260 at 0.05 level of significant. VAD the last measurement of companies' attributes shows a positive significant correlation with EADP. The significant value for VAD is 0.00 with the correlation coefficient of -0.504 at 0.05 level of significant. From the results, it is concluded that there are significant correlations between EADP and ROA, LEV and VAD but no significant correlation with CR.

**Table 4.5: Model Summary - Multiple Regression Analysis**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.920	.846	.837	.0262031

*Source: Researcher's computation (2016)*

The adjusted R Square of 0.837 shows that ROA, CR, LEV and VAD accounted for 83.7% of the variation in environmental accounting disclosure practices (EADP).

**Table 4.6: ANOVA Results**

Source of variation	Sum of Squares	Df	Mean Square	F-calc	F- crit.	Sig.
Regression	.246	4	.061	89.455	2.51	.000
Residual	.045	65	.001			
Total	.290	69				

*Source: Researcher's computation (2016)*

In Table 4.6, the result of the joint influence of the four companies' attributes (ROA, CR, LEV and VAD) was considered on EADP. The F –calculated of 89.455 was obtained which is greater than the F-critical of 2.51. Also, the p-value is less than 0.05. Therefore, there is a significant influence of ROA, LEV and VAD on EADP but as for CR, the result shows insignificant influence on EADP.

**Table 4.7: Coefficients of the Model**

	Unstandardized Coefficients		Standardized Coefficients	t-calc.	Sig.	VIF
	B	Std. Error	Beta			
(Constant)	-.132	.020		-6.597	.000	
ROA	-.229	.018	-1.373	-12.872	.000	4.810
CR	-.011	.016	-.114	-0.6875	.055	2.499
LEV	.299	.019	1.202	15.661	.000	1.324
VAD	.004	.002	.190	2.291	.025	2.906

Result in Table 4.7 shows that ROA has significant negative influence on EADP (B =-0.229, t- calc. = -12.872, p=0.000, p<0.05). This means that as ROA increases, the level of EADP decreases significantly. Also, CR has insignificant negative influence on environmental disclosure (B =-0.011, t- calc. = -0.6875, p=0.055, p>0.05) which also indicates that as CR does not influence the level of EADP. Result also shows that LEV (B =0.299, t- calc. = 15.661, p=0.000, p<0.05) and VAD (B =0.004, t- calc. = 2.291, p=0.025, p<0.05) has significant positive influence on EADP.

In support of the findings of the study, Makori & Jagongo (2013) affirmed that there is significant negative influence between profitability and environmental accounting disclosure practices (EADP) as disclosing the environmental impact costs would add more on operating costs alongside with finance charges and taxation, thereby decreases the firm's profitability. On liquidity, the findings of this study collaborates Nugroho & Arjowo (2014), as CR has no significant influence on the environmental accounting disclosure practices of the firm. Also, the results revealed that leverage and Value added by firms are the key determinants of EADP. This is in collaboration with Sulaimana, Abdullah & Fatimaa (2014) and Darus, Yusof and Janggu (2016) who opined that good leverage and value created by firms will better their environmental performance strategies to enhance the overall values of their organizations.

## 5. Conclusion and Recommendations

Based on the findings of this study, it is concluded that the listed oil and gas companies in Nigeria are not practicing environmental accounting as revealed in the disclosure of little, scanty, qualitative and ad-hoc information in their annual reports and accounts and sometime non-existent, and that environmental accounting disclosure practices are significantly influenced by ROA, LEV and VAD in the listed oil and gas companies in Nigeria. Therefore, companies' attributes (profitability, leverage and Value added by firm) are predicted to be the main determinants of environmental accounting disclosure practices in the oil and gas industry in Nigeria.

On the basis of the conclusions, the following recommendations are made;

- i. Reporting entities should endeavor to account-for all the aspects of the environment in their annual reports by following the GRI guidelines pending the issuing of standards.
- ii. IASB, all financial reporting councils of nations and other environmental stakeholders should partner and develop environmental accounting disclosure standards that will harmonise the environmental accounting practices of the firms as well as results in providing environmental quantifiable data.
- iii. Financial Reporting Council of Nigeria (FRCN) and the legislatures of Nigeria should take drastic steps at making more oil and gas companies listed on the NSE and making EADP mandatory with some tax incentives for motivation.

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**Table 4.1: EADP and Environmental Accounting Practices on Average**

S/N	Environmental Elements/Issues	Disclosure Score = (“Full =1”, “Partial =1/2” “Non-disclosure = 0”) using content analysis.										
		A	B	C	D	E	F	G	H	I	J	Total
<b>A. Environmental Financial Accounting</b>												
1.	Environmental accounting mission Statement, Strategy & Principles.	0	0	0	0	0	0	0	0	0	0	0
2.	Environmental accounting objectives programs for the period.	1	1	0.5	0	1	0.5	1	0.5	0.5	0	6
3.	Environmental targets/standards	0	0	0	0	0	0	0	0	0	0	0
4.	Environmental Financial Disclosures	0	0	0	0	0	0	0	0	0	0	0
5.	Environmental performance indicator/ratios	0	0	0	0	0	0	0	0	0	0	0
6.	Investment Appraisal to include consideration of the environment	0	0	0	0	0	0	0	0	0	0	0
7.	Assessment of actual/contingent assets	0	0	0	0	0	0	0	0	0	0	0
8.	Assessment of actual/contingent liabilities	0	0	0	0	0	0	0	0	0	0	0
9.	Provision for environmental protection and management/decommissioning	0	1	0.5	1	0	0	0	0	0	0	0.5
10.	A record of the allocation of specific fund With to environmental contingent liability	0	0	0	0	0	0	0	0	0	0	0
	<b>TOTAL</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0.5</b>	<b>1</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>	<b>9</b>
<b>B. Environmental Pollution Cost &amp; Management Accounting</b>												
1.	Wastes management/Eco-efficiency/restoration	0	0	0	0	0	0	0	0	0	0	0
2.	Voicing on pollution and emission provisions – Noise, oil spills, visual quality, including any attempt to identify, improve, control, treat or prevent toxic discharge.	0	1	0.5	0	0.5	0	0	0	0.5	0	2.5
3.	Air emission /information/solid waste cost	0	0	0	0	0	0	0	0	0	0	0
4.	Past expenditure for pollution, reduction, prevention and control.	0	0	0	0	0	0	0	0	0	0	0
5.	Current cost for pollution, reduction, prevention and control.	0	0	0	0	0	0	0	0	0	0	0
6.	Conservation of natural resources and raw materials conservation plans	0	0	0	0	0	0	0	0	0	0	0
7.	Recycling plant/treatment of waste products	0	0	0	0	0	0	0	0	0	0	0
8.	Designing facilities harmonious with the environment, Contingencies and provisions for carbon sequestration, climate change provisions, etc.	0	0	0	0	0	0	0	0	0	0	0
9.	Environmental awareness training cost	0	0	0	0	0	0	0	0	0	0	0

10.	Products development, improvements in products (including products that care for and help protect the environment).	0	0	0	0	0	0	0	0	0	0	0	0
	<b>TOTAL</b>	<b>0.5</b>	<b>1</b>	<b>0.5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.5</b>	<b>0</b>	<b>2.5</b>	
	<b>C. Environmental Energy Accounting</b>												
1.	Energy saving and conservation	0	0	0	0	0	0	0	0	0	0	0	
2.	Development/exploration of new sources of energy for efficiency, insulation, etc.	0	0	0	0	0	0	0	0	0	0	0	
3.	Utilization of waste materials for energy conservation	0	0	0	0	0	0	0	0	0	0	0	
4.	Discussion of the company's efforts to reduce energy consumption	0	0	0	0	0	0	0	0	0	0	0	
5.	Voicing the company's concern about the energy shortage.	0	1	1	1	0	0	0	0.5	0	0.5	4	
6.	Direct energy used report	0	0	0	0	0	0	0	0	0	0	0	
7.	Indirect energy used report	0	0	0	0	0	0	0	0	0	0	0	
8.	Disclosing company's energy policies	0	0	0	0	0	0	0	0	0	0	0	
9.	Identification of environment impacts of products/services	0	0	0	0	0	0	0	0	0	0	0	
10.	Physical unit analysis of materials/energy/waste	0	0	0	0	0	0	0	0	0	0	0	
	<b>TOTAL</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.5</b>	<b>0</b>	<b>0.5</b>	<b>4</b>	
	<b>D. Environmental Accounting Audit</b>												
1.	Reference to environmental review	0	0	0	0	0	0	0	0	0	0	0	
2.	Scoping, audit, assessment, including independent attestation.	0	0	0	0	0	0	0	0	0	0	0	
3.	Incident of fines for non-compliance												
4.	Obtaining certification for Environmental Management System/ISO 14001	1	1	1	0.5	0.5	0.5	1	0.5	0.5	0.5	7	
5.	Conducting Environment Impact Assessment (EIA) / Air quality assessment	0	0	0	0	0	0	0	0	0	0	0	
6.	Execution of environmental policies	0	0	0	0	0	0	0	0	0	0	0	
7.	Auditors opinion on compliance with environmental standards and regulations as well as steps taken to monitor compliance with policy statement	0	0	0	0	0	0	0	0	0	0	0	
8.	Environmental risk assessment and estimation	0	0.5	0.5	0	0	0	0	0	0	0.5	1.5	
9.	Environmental Auditory Reports	0	0	0	0	0	0	0	0	0	0	0	
10.	Professional advice on environmental matters/compliance and award(s).	0	0	0	0	0	0	0	0	0	0	0	
	<b>TOTAL</b>	<b>1</b>	<b>1.5</b>	<b>1.5</b>	<b>0.5</b>	<b>0.5</b>	<b>1</b>	<b>1</b>	<b>0.5</b>	<b>0.5</b>	<b>1</b>	<b>8.5</b>	
	<b>GRAND TOTAL DISCLOSURE SCORES (GTDS)</b>	<b>2</b>	<b>5.5</b>	<b>4</b>	<b>2.5</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>24</b>	
	<b>DISCLOSURE SCORES (%)</b>	<b>8.3</b>	<b>22.9</b>	<b>16.7</b>	<b>10.4</b>	<b>8.3</b>	<b>4.2</b>	<b>8.3</b>	<b>8.3</b>	<b>8.3</b>	<b>4.2</b>	<b>8.3</b>	
	<b>Industry Disclosure scores (%)</b>	<b>13%</b>											

Source: Developed by the Researcher (2016) from the Sampled Companies' Annual Reports & Accounts, 2009 – 2015.